APPENDIX A

COURT OF APPEAL OF LOUISIANA
FOURTH CIRCUIT

No. 89-CA-1420

STEPHEN A. MISTICH,

v.

PIPELINES, INC., *et al.*

Nov. 17, 1992

Rehearing Denied Dec. 16, 1992

Before BARRY, KLEES and ARMSTRONG, JJ.

ARMSTRONG, Judge.

In this maritime personal injury case, defendant, Brown & Root, Inc., appeals from a judgment in the amount of $7,147,608.00 rendered against it and in favor of plaintiff, Stephen A. Mistich.

Plaintiff initially filed suit in December 1986 under the general maritime law and the Jones Act, 46 U.S.C.A.App. § 688, claiming he had developed a type of leukemia, chronic myelogenous leukemia (CML), as a result of his exposure to hazardous levels of gamma radiation from x-rays while working as a welder on oilfield pipelaying barges owned by defendant, Brown & Root. Also named as defendants in plaintiff's petition for damages were Lennard Pipelines, Inc., Global Divers and Contractors, Inc., Sea-Con Services, and Santa Fe International, Corp., all

of whom, like Brown & Root, were plaintiffs's former employers.

Plaintiff settled with all defendants except Brown & Root before trial. Brown & Root subsequently moved to continue the trial, but that motion was denied by the trial court. A bench trial was concluded on April 20, 1989, and judgment was rendered on April 28, 1989. The trial court awarded plaintiff $1,147,607.00 in special damages; $2,000,000.00 in general damages; and $4,000,000.00 in punitive damages. On May 14, 1989, plaintiff died of leukemia. The trial court issued ten pages of reasons for judgment on May 25, 1989.

Plaintiff, Stephen A. Mistich, was born on May 4, 1953. He graduated from Belle Chasse high school in 1971 and, in February 1973, began working for Brown & Root as a welder's helper in their Belle Chasse yard. A pre-employment physical revealed no problems except poor eyesight. Until his leukemia manifested itself, Mistich had been hospitalized only once in his life, to have his tonsils removed. He had no record of any serious illness.

At Brown & Root Mistich moved up to tack welder, structural welder and finally to pipe welder. In November 1974 Mistich went to work in Saudi Arabia for two months as a welder foreman. Upon his return he worked for six months with a diving and salvage company where he learned underwater welding, setting a world record for depth welding while there. Prior to being hired by the diving and salvage company, Mistich underwent another thorough physical exam which revealed no physical problems. In the summer of 1975 Mistich went back to work for Brown & Root in its fabrication shop for several weeks before going to work for another company welding pipes and structures on offshore oil platforms, and subsequently another company doing pipe welding. This pattern of working primarily for Brown & Root, but elsewhere during slow periods, more or less continued throughout Mistich's career as a welder. Mistich's primary employer

during his career as a welder was Brown & Root. In late 1983, he received a ten-year continuous service pin from Brown & Root.

Mistich returned to work for Brown & Root in late 1975 or early 1976. In June 1976 he went to work offshore on a Brown & Root pipelaying barge, the No. 278. This was the first time Mistich had worked aboard a pipelaying barge and, according to him, had ever worked around x-ray equipment. Mistich worked on pipelaying barges for Brown & Root at least until 1984. He worked on seven different Brown & Root barges at various times.

Pipelaying barges construct or lay pipelines from onshore to offshore facilities for independent pipeline owners. A company such as Brown & Root would supply the barge, manpower, and pipe necessary to construct the pipelines. Generally, the pipeline owner would hire a testing company to x-ray the completed pipe welds before the pipe would be laid. However, sometimes Brown & Root would hire the testing company.

Brown & Root pipelaying barges are all basically set up the same way. Welding stations forty-feet apart on the starboard or right side of the barge form a kind of assembly line running from bow to stern. Forty-foot sections of pipe are moved down the assembly line of welding stations and, at each station, a different weld is placed on the pipes. The sections of pipe are welded end-to-end to create a continuous pipeline. After the welded sections of pipe are completed the barge is moved forward and the pipeline slides off the stern of the barge down a ramp into the sea.

The final weld is actually done at the fourth station, also known as the capping station. The fifth station is not a welding station but an x-ray station. At that station the completed welds are x-rayed to insure they are not defective. If a defective weld is found, the pipelaying operation stops until the defective weld is ground out and a new one installed. While the defective welds are

being replaced in the x-ray station, the x-ray technicians often "move up" to the fourth station, or capping station, to x-ray another capped weld. Even when there is no defective weld being repaired in the x-ray station, the technicians often move up to the capping station to x-ray the capped weld immediately after it is completed so that if a defective weld is found, it can be repaired in the capping station. Moving up saves valuable time, increasing the barge's productivity. Risers, or angled pipe connections, are often constructed on the deck of the barge and x-rayed there. Also, on occasion, small pipelines are constructed and x-rayed on the open deck of the barge, outside of the welding stations.

The pipe welds are x-rayed with either internal or external x-ray cameras. The internal x-ray cameras are used on pipe 12 inches or larger. An internal x-ray camera is mounted on a crawler device which is operated by remote control. The crawler is sent into the pipe and it moves up to the weld upon which the operator has placed a battery-operated "source." The weld has film placed around it. The operator removes the "source" and the x-ray camera is activated with a five-second delay. One 360 degree x-ray photograph is taken of the weld.

When an external camera is used, three x-rays are taken of the weld, each showing 120 degrees of the weld. The first shot is taken with the camera on top of the pipe at the weld site. The camera is rotated 120 degrees and a second shot is taken, and then a third shot, to photograph the final 120 degrees of the weld. The first shot is directed to the deck, the second out over the water, and the third inboard at an upward angle across the deck of the barge.

Evidence established that on an average day a Brown & Root pipelaying barge would lay 100 forty-foot lengths of pipe. This means on an average day either 100 or 300 x-rays were taken, depending on whether an internal or external camera was used. Evidence showed that crew

quarters were usually located adjacent to the x-ray station. The crews of the pipelaying barges, including welders such as plaintiff, lived and worked aboard the barges while completing the offshore pipelaying jobs. With two twelve-hour shifts, pipelaying went on around-the-clock. While one shift worked, the other ate, relaxed and slept.

Medical evidence established that the type of leukemia plaintiff suffered from had only two known causes: the first, exposure to excessive amounts of gamma radiation, such as from the x-rays used on the Brown & Root barges plaintiff worked on, and the second, exposure to industrial chemicals such as benzene. The causal connection between plaintiff's leukemia and his exposure to any excessive radiation from x-rays while working on Brown & Root pipelaying barges is the primary factual dispute presented by this appeal.

On appeal Brown & Root raises nine assignments of error.

MOTION FOR CONTINUANCE

Brown & Root first argues a procedural matter. It claims the trial court erred in denying its motion to continue the trial after it learned at a pre-trial conference twelve days prior to trial that plaintiff had settled his claims against all other defendants. Brown & Root was given a copy of the joint settlement stipulation on April 9, 1989. Brown & Root requested a continuance to "meet the unexpected shift in the burden of proof occasioned by the settlement." The request was denied and an application for supervisory review on that ruiing was subsequently denied by this court.[1] On appeal Brown & Root also claims the trial court erred further by not relieving defendant of its burden of proving negligence on the part of the settling defendants. Brown & Root argues that it was prejudiced and deprived of an opportunity to ade-

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[1] *In re Brown & Root*, No. 89-C-0587 (La.App. 4th Cir. March 31, 1989).

quately prepare to establish the negligence of the released co-defendants by the trial court's failure to continue the trial. Brown & Root alternatively argues that the trial court erred in failing to proportionately reduce the plaintiff's award by the number of settling co-defendants. In *Raley v. Carter*, 412 So.2d 1045 (La.1982), the Louisiana Supreme Court reversed a decision by this Court which reduced the proportion of fault attributed at trial to one defendant after plaintiff released three co-defendants on the morning of trial. Reversing this court's reduction of plaintiff's award, the Supreme Court stated:

> To hold otherwise would seriously impair pretrial settlement negotiations. Aware of the possibility that a late settlement may result in the reduction of an award rendered after trial with the remaining defendants, a plaintiff may feel forced to choose between an early (and probably unsatisfactory) compromise or proceeding to trial against all defendants. Our courts have repeatedly refused to implement jurisprudential rules which would reduce the plaintiff's incentive to reach settlement with defendants without the need for trial. (Citations omitted.)

One significant difference between *Carter* and the instant case is that the defendant in *Carter* failed to request a continuance, unlike Brown & Root, which immediately did so. However, another and more important distinction is the length of time before trial that the defendant became aware of the settlement. In *Carter*, the co-defendants were released on the day of trial. In the instant case, Brown & Root learned of the settlements twelve days before trial.

In *Danks v. Maher*, 177 So.2d 412 (La.App. 4th Cir. 1965), also cited by Brown & Root, plaintiff settled her malpractice claim against two defendants after trial was almost completed, but before the case was submitted to the jury. This court later reduced plaintiff's judgment

against two other co-defendants by one-half, reasoning that the remaining defendants had been unfairly deprived of an opportunity to establish the joint negligence of the parties released. This case, like *Carter*, can be distinguished by the timing of the settlement, or the length of time before trial that the remaining defendant learned of the settlement.

Considering the length of time before trial that Brown & Root learned of the settlement, at least twelve days, longer according to plaintiff, we are unable to say that the trial court erred in denying the continuance or in not proportionately reducing the award against Brown & Root by the number of released co-defendants.

SCOPE OF REVIEW

The trial court found that Brown & Root was negligent and that Brown & Root pipelaying barges were unseaworthy. This court applies different standards of appellate review to negligence or Jones Act claims, and claims for unseaworthiness under general maritime law. *Osorio v. Waterman Steamship Corp.*, 557 So.2d 999 (La.App. 4th Cir.), *writ denied*, 561 So.2d 99 (La.1990). Jones Act negligence claims are reviewed under a federal standard: "A judgment for plaintiff must be affirmed unless there is a complete absence of supporting facts." *Daigle v. Coastal Marine, Inc.*, 488 So.2d 679 (La.1986); *Thezan v. Maritime Overseas Corp.*, 708 F.2d 175 (5th Cir.1983), *cert. denied*, 464 U.S. 1050, 104 S.Ct. 729, 79 L.Ed.2d 189 (1984). Under the general maritime law, the standard is whether reasonable persons could have arrived at a contrary verdict. *Daigle, supra*; *Fontenot v. Teledyne Movible Offshore, Inc.*, 714 F.2d 17 (5th Cir.1983). Factual findings made by the trial court in a claim under the general maritime law are reviewed under the clearly erroneous standard. *Daigle, supra*; *Parks v. Dowell Div. of Dow Chemical Corp.*, 712 F.2d 154 (5th Cir.1983). The clearly erroneous standard of appellate review is the same manifestly erroneous or

clearly wrong standard of review employed by Louisiana appellate courts in reviewing factual findings of lower courts. *Canter v. Koehring Co.*, 283 So.2d 716 (La. 1973).

In *Rosell v. ESCO*, 549 So.2d 840 (La.1989), the Louisiana Supreme Court commented on the clearly erroneous standard as applied to factual findings based largely on the credibility of fact witnesses. The court stated:

> When findings are based on determinations regarding the credibility of witnesses, the manifest error—clearly wrong standard demands great deference to the trier of fact's findings; for only the fact-finder can be aware of the variations in demeanor and tone of voice that bear so heavily on the listener's understanding and belief in what is said. Where documents or objective evidence so contradict the witness's story, or the story itself is so internally inconsistent or implausible on its face, that a reasonable fact finder would not credit the witness's story, the court of appeal may well find manifest error or clear wrongness even in a finding purportedly based upon a credibility determination. But where such factors are not present, and a fact-finder's finding is based on its decision to credit the testimony of one of two or more witnesses, that finding can virtually never be manifestly erroneous or clearly wrong. (Citations omitted.)

NEGLIGENCE

Brown & Root raises as its second assignment of error the trial court's finding that it was negligent. We will address causation later. Here, we are assuming that allowing plaintiff to be exposed to radiation in excess of that permitted under state and federal regulations was causally connected to his leukemia. "[U]nder the Jones Act, a vessel owner will be deemed negligent if he fails to exercise reasonable care to maintain a reasonably safe

work environment." *Ceja v. Mike Hooks*, 690 F.2d 1191 (5th Cir.1982). The slightest negligence is sufficient to sustain a finding of liability under the Jones Act. *Johnson v. Offshore Exp., Inc.*, 845 F.2d 1347 (5th Cir.), *cert. denied*, 488 U.S. 968, 109 S.Ct. 497, 102 L.Ed.2d 533 (1988); *Theriot v. J. Ray McDermott and Co., Inc.*, 742 F.2d 877 (5th Cir.1984); *Landry v. Oceanic Contractors, Inc.*, 731 F.2d 299 (5th Cir.1984). Certainly, Brown & Root's duty under the Jones Act encompassed a duty to plaintiff and other crewmen to insure that they were not exposed to gamma radiation in excess of the levels permissible under state and federal regulations.

Brown & Root cites several factual findings by the trial court which are allegedly erroneous. The ultimate factual finding by the court, however, is that Brown & Root was negligent in failing to maintain a reasonably safe work environment; this factual finding is the focus of our review.

We first consider the extent to which plaintiff was exposed to gamma radiation from x-rays. Ronald Wascom, who, at the time of trial, was the Program Manager for the Inspection and Enforcement Section of the Nuclear Energy Division of the Department of Environmental Quality for the State of Louisiana (hereinafter referred to as the NED, for Nuclear Energy Division), testified that in 1967 the NED determined that certain Brown & Root workers had been exposed to excessive radiation from x-raying activities on the pipelaying barge No. 211.[2] Brown & Root was notified of this fact by letter in August 1967. Similarly, in 1969, Brown & Root was notified by letter that an inspection showed that unless protective shielding was installed on its barges, the work-

[2] The No. 211 was the only Brown & Root pipelaying barge inspected because the company's other three barges were essentially identical. In contrast, during a 1976 inspection of McDermott barges, each of its five pipelaying barges was inspected because all were different.

ers in the crew's bunk room would be exposed to an estimated 89,000 millirems of radiation per week, almost 9,000 times greater than the recommended average weekly level of exposure. It was established at trial that plaintiff and other pipewelders normally slept in the bunk room adjacent to the pipe alley. It was recommended in 1969 that a minimum of 2.5 inches of lead shielding be installed in the x-ray station. The NED advised Brown & Root that this amount "was necessary to adequately protect the personnel in those areas adjacent to the x-ray station."

In 1976, NED conducted a follow-up investigation to determine whether protective shielding had been installed on the barges as recommended in 1967 and 1969. The recommended level of protective shielding had not been installed when plaintiff began to work on Brown & Root pipelaying barges in 1976, and it was never installed during the years he worked on the barges. Ronald Wascom testified that in 1976 Brown & Root had only .25 inches of lead shielding on the deck of the barge, under the "pipe alley," in the x-ray station, not the 2.5 inches recommended in 1969. He also said the lead shielding did not extend 7 feet forward and aft of the x-ray station as recommended, and that no shielding had been placed at the ends of the x-ray station as promised by Brown & Root in 1967.

Wascom said that after the 1976 study NED recommended Brown & Root enclose the entire x-ray station in a "protective shield." He said it was recommended that the shield be 1.4 inches of lead. He also stated it could have been constructed of 14 inches of concrete, or 3.5 inches of steel. He said even this would not completely stop radiation penetration into the crew quarters, but would bring it below .5 rads of radiation per year. Wascom testified that the recommended shielding would have only protected from x-raying activities performed in the x-ray station, not x-raying done on the open deck or in the capping station. Wascom said this 1976 report was given to Brown & Root.

The evidence shows that normally, x-rays of completed welds are taken in the x-ray station, the station forty feet away from the capping station where the final weld is placed on the pipe. These x-ray stations on Brown & Root barges never had more than .25 inches of protective lead shielding underneath or around them during the years plaintiff worked for Brown & Root. There is contradictory evidence on what percentage of x-rays were taken in the capping station as opposed to the x-ray station. Plaintiff said 90% of the x-rays were taken in the capping stall. Another Brown & Root worker testified that when he worked with plaintiff, "most" x-rays were taken in the capping stall after the cap weld was placed on the pipe. This witness stated that the technicians would x-ray "as soon as we got out of their way." Another Brown & Root employee testified that most of the x-rays were taken in the x-ray station. X-rays were also taken on the open deck after sections of "risers" were welded together. Finally, on occasion, two pipelines were welded at the same time. One, the normal large diameter pipe, would be welded and x-rayed in the pipe alley. The second, constructed of smaller diameter pipe, would be welded and x-rayed on the open deck.

Wascom testified that the maximum allowable yearly amount of radiation exposure from x-rays for someone, such as plaintiff, was 500 millirems, or .5 rads. He calculated that a person five feet away from a .5 inch thick pipe would receive 50 millirems per x-ray of the pipe, assuming a 30 second x-ray shot. In his 1976 report Wascom stated that Brown & Root typically shoots a 10 inch pipe for 25 seconds per x-ray. External x-ray cameras would take three shots of an average of 100 welds a day, while internal x-ray cameras would take one shot of 100 welds. Dr. Lee Roy Morgan, an oncologist and pharmacist, testified that if plaintiff had been exposed to one x-ray shot per day from the x-ray source used on Brown & Root barges, while standing 5-8 feet from the

pipe, he would have been exposed to 1800 millirems 1.8 rads of radiation, or 1800 millirems [sic], more than three times the maximum allowable annual exposure.

In 1976 plaintiff worked a total of 66 days on Brown & Root pipelaying barges. He worked 143 days in 1977, 112 days in 1978, 109 days in 1980, 168 days in 1981, 38 days in 1982, 126 days in 1983, 22 days in 1984. As will be discussed later, January 19, 1982 is probably the latest date to which a causal connection can be made. Assuming that plaintiff was exposed to only 100 millirems a day for the 66 days he worked on Brown & Root pipelaying barges in 1976, he would have received more than thirteen times the 500 millirem (.500 rems or .5 rads) yearly limit imposed by federal and state regulations. Assuming an exposure of 100 millirems a day, it is more probable than not that plaintiff was exposed to grossly excessive amounts of radiation each year from 1976-1981 while working on Brown & Root barges.

The precautions taken by Brown & Root were inadequate to protect plaintiff from being exposed to levels of radiation in excess of the maximum allowable limit under federal and state regulations. We are unable to say that there was a complete absence of supporting facts for the trial court's finding that Brown & Root failed to maintain a reasonably safe work environment for plaintiff, breaching its duty owed to plaintiff under the Jones Act, and thus was negligent.

UNSEAWORTHINESS

To be considered seaworthy, a vessel and its appurtenances must be reasonably suited for the purpose or use for which they were intended. *Johnson v. Offshore Exp., Inc., supra.* An absolute and non-delegable duty is imposed on the shipowner to furnish a vessel reasonably safe and fit for its intended purpose. *Webb v. Dresser Industries,* 536 F.2d 603 (5th Cir.1976), *cert. denied,* 429 U.S. 1121, 97 S.Ct. 1157, 51 L.Ed.2d 572 (1977).

Any condition rendering the vessel unfit for her intended use makes the vessel unseaworthy. *Mitchell v. Trawler Racer, Inc.*, 362 U.S. 539, 80 S.Ct. 926, 4 L.Ed.2d 941 (1960). Unseaworthiness may arise from the employment of an unsafe method of work such as the shipowner's failure to provide adequate equipment for the performance of an assigned task or necessary safety equipment. *Vargas v. McNamara*, 608 F.2d 15 (1st Cir.1979).

Considering the foregoing evidence discussed in addressing plaintiff's claim for negligence, and pretermitting the issue of causation, we are unable to say that the trial court erred in finding that the Brown & Root barges plaintiff worked on from 1976-1984, were unseaworthy. A vessel which exposes its crewmen to levels of gamma radiation grossly in excess of that allowable under federal and state regulations must be deemed unseaworthy.

CAUSATION

The link between exposure to excessive radiation and CML was clearly established by evidence introduced at trial. Dr. David Margileth, both a hematologist and oncologist, began treating plaintiff for CML in California where plaintiff had moved to live with his mother shortly after being diagnosed with CML in January 1986. Dr. Margileth testified that the only two known causes of CML are exposure to radiation and exposure to industrial chemicals such as benzene. Although admitting that in the majority of CML cases a cause cannot be ascertained, he said the overwhelming known cause is exposure to radiation. He equated the relationship of exposure to radiation and CML to the relationship of cigarette smoking to lung cancer.

Dr. Margileth stated that, assuming a radiation physicist found that plaintiff was exposed to excessive amounts of radiation, and assuming that plaintiff was exposed to excessive amounts of radiation on pipelaying barges, it

was his opinion that such exposure to radiation played a role in the cause of his disease. We have already determined the evidence supports the conclusion that, more probably than not, plaintiff was exposed to excessive amounts of radiation during the years he worked on Brown & Root pipelaying barges. Dr. Margileth testified that the latency period, the time between exposure to the maximal chance of developing CML, is a minimum of 3 years, a maximum of 15 years, with the peak being 5-10 years.

Dr. Carl Gustav Kardinal, a hematologist and oncologist, testified that there is a well-documented relationship between CML and exposure to radiation. He said the latency period between radiation exposure and the onset of CML was a minimum of 2 years, a maximum of 10 years, and an average of between 5 and 7 years. Based on plaintiff's diagnosis on January 19, 1986, he estimated that the peak latency period would have been around 1981. However, he could not definitely say that radiation exposure caused plaintiff's CML.

As previously discussed, Dr. Lee Roy Morgan, an oncologist and pharmacologist, testified that if plaintiff was exposed to one x-ray shot per day, with the x-ray device down and in board, while standing 5-8 feet from the pipe, he would be exposed to 1.8 rads of radiation. He concluded that such exposure was sufficient to have caused leukemia cells to develop.

Plaintiff was initially diagnosed with CML by Dr. William Stein. Dr. Stein saw plaintiff as a treating physician only on that one occasion. Plaintiff was later treated by Dr. Stein's partner, Dr. Marcus Black, until June 1986, when plaintiff moved to California. Both physicians are oncologists. Dr. Stein testified on behalf of Brown & Root and identified many problems associated with exposure to radiation other than leukemia. He was asked hypothetical questions about levels of exposure to radiation and noted varying side effects such as the development of cataracts,

thyroid problems, pulmonary fibrosis, hair loss, G.I. tract problems, diarrhea, nausea and vomiting, none of which he found in plaintiff. However, he admitted that a person could be exposed to excessive levels of radiation, that is, in excess of .5 rems per year, without manifesting any of these problems. Dr. Stein testified that, in his opinion, plaintiff's leukemia was not caused by exposure to radiation.

Plaintiff bore the burden of proving that it was more probable than not that Brown & Root's actions in allowing him to be exposed to excessive radiation caused him to develop CML. *See Wisner v. Illinois Central Gulf Railroad*, 537 So.2d 740 (La.App. 1st Cir.1988), *writ den.*, 540 So.2d 342 (La.1989). Courts recognize that medicine is not an exact science and that it is not unusual for medical experts to be unwilling to state unequivocally the cause of a certain malady. *Wisner, supra.* The Louisiana Supreme Court has stated:

> Causation is not necessarily and exclusively a medical conclusion. It is usually the ultimate fact to be found by the court, based on all credible evidence. *Haughton v. Fireman's Fund American Ins. Companies*, 355 So.2d 927 (La.1978).

In the instant case, Dr. David Margileth, plaintiff's primary treating physician, testified that, assuming plaintiff had been exposed to excessive amounts of radiation, it was his opinion that the exposure was a cause of plaintiff's leukemia. Dr. Lee Roy Morgan testified similarly. We have already determined that it was more probable than not that plaintiff was exposed to excessive radiation while working on Brown & Root pipelaying barges.

Considering this evidence, we are unable to say that there was a complete absence of probative facts to support the trial court's finding that it was more probable than not that plaintiff's leukemia was caused by his exposure to excessive radiation, or that such a finding was clearly erroneous.

PLAINTIFF'S COMPARATIVE NEGLIGENCE

Brown & Root next claims the trial court erred in not finding plaintiff comparatively negligent. Plaintiff testified that on one occasion he accidentally stumbled into an x-ray area and apparently was "zapped" by x-rays. Besides that one instance, which he said occurred while working for another employer, there was no direct evidence that he was exposed to excessive radiation through his own fault. Although a seaman has the duty to use reasonable care, the duty to provide a safe work environment lies with the vessel owner. *Ceja v. Mike Hooks, Inc., supra; Osorio v. Waterman Steamship Corporation, supra.* A seaman's duty to protect himself is slight care; not ordinary care. *Pickle v. International Oilfield Divers, Inc.*, 791 F.2d 1237 (5th Cir.1986), *cert. denied*, 479 U.S., 1059, 107 S.Ct. 939, 93 L.Ed.2d 989 (1987); *Osorio v. Waterman, supra.* A seaman is not contributorily negligent simply because he works in an unsafe area of the vessel which was created and/or allowed to exist by the owner. *Ceja, supra.*

Considering a seaman's duty of care, and the evidence of Brown & Root's negligence and maintenance of an unseaworthy vessel, we are unable to say the trial court erred in not finding plaintiff contributorily negligent.

APPORTIONMENT OF FAULT TO OTHER PARTIES

Brown & Root claims the trial court also erred in not apportioning fault equally among all defendants—itself and the defendants plaintiff settled with prior to trial. The evidence undisputably establishes that plaintiff did most of his pipeline welding while employed by Brown & Root. In its reasons for judgment, however, the trial court found that plaintiff was exposed to excessive levels of radiation while working on pipelaying barges owned by four co-defendants with whom plaintiff settled, Pipelines, Inc., Lennard Pipelines, Inc., Sea-Con Service, Inc., and Santa Fe International, Corp.

The trial court further found that plaintiff's employment with all of these companies, except Santa Fe, preceded his January 1986 CML diagnosis by less than four years. Considering the testimony of expert witnesses presented by both sides, the trial court found that the latency period for CML was "not less than three years, but more reasonably in excess of four years," and thus, excluded the possibility of a causal connection between any radiation exposure while working for those employers and plaintiff's CML. Brown & Root takes exception to the trial court's finding as to the latency period and conclusion on causation based on those findings.

Dr. Margileth testified that the latency period for CML was a minimum of 3 years, a maximum of 15 years, with the peak period of developing the disease after exposure being 5-10 years. He testified that, based on plaintiff's white count in January 1986, plaintiff would have been diagnosable "maybe 12 to 18 months before that." Using the minimum of 3 years, and assuming that plaintiff had the disease 12 months before January 1986, was "diagnosable," [sic] the latest plaintiff could have been exposed to radiation which could have caused his disease would have been early January 1982. Dr. Kardinal testified that the average latency period between exposure and onset of CML was 5-7 years. He estimated that the peak latency period in the instant case would have been around 1981.

Brown & Root's own witness, Dr. Stein, answered "most likely" when asked whether one would look at 1981 and earlier for incidences of radiation exposure as a cause of plaintiff's CML. This date was based on plaintiff's having been diagnosed in January 1986, and Dr. Stein's opinion that the most likely latency period would have been 5-10 years from date of exposure.

Plaintiff worked for Lennard Pipelines, Inc. after May 13, 1984; Sea-Con Services, Inc. from January 22, 1982 to March 2, 1982; and Pipelines, Inc. after June 1984.

Based on the evidence adduced at trial pertaining to the latency period between exposure and onset of illness, we are unable to say the trial court would have been clearly wrong in finding that it was more probable than not that any radiation exposure plaintiff may have received while working for Lennard Pipelines, Sea-Con Services, and Pipelines, Inc. was not a cause of his CML.

Plaintiff worked for Santa Fe International from December 22, 1978 to February 25, 1979, nine weeks. In its answers to plaintiff's interrogatories, Santa Fe stated it believed plaintiff worked a 14 days on/7 days off schedule. Based on this schedule, plaintiff would have worked 42 days on an offshore pipelaying barge for Santa Fe. Plaintiff admitted being "zapped" by x-ray radiation on at least one occasion while working for Santa Fe. The evidence indicates, based on plaintiff's own testimony, that the working conditions on Santa Fe pipelaying barges were the same as Brown & Root's. The trial court dismissed the question of liability on the part of Santa Fe because plaintiff worked for that company only a short period of time when compared with his length of employment on Brown & Root barges. Because of the nature of radiation damage, the liability of Santa Fe cannot be dismissed so easily.

Dr. Kardinal testified that when a person is exposed to radiation, cells in the body are damaged, but the body kills them off and allows them to heal. He said when the body can no longer control damage to the cells, such as may occur with prolonged exposure to radiation, then the cells start proliferating, growing uncontrollably, and moving throughout the bone marrow. The longer and more often one is exposed to radiation, the more radiation the body is subjected to, and the greater the likelihood that the body will succumb to the damaged cells and develop leukemia. We have already determined that plaintiff's exposure to excessive radiation while working for Brown & Root between 1976 and 1981 was a cause of his CML. Under these circumstances, it cannot be said that 42 days

of exposure to radiation on Santa Fe barges in late 1978 and early 1979 did not also contribute to plaintiff's CML. The trial court clearly erred in finding otherwise.

Having found that the trial court erred in allocating 100% of fault to Brown & Root, we will now seek to "render any judgment which is just, legal, and proper upon the record on appeal." *Watson v. State Farm Fire and Casualty Ins. Co.*, 469 So.2d 967 (La.1985); La. C.C.P. art. 2164. In *Watson*, the Louisiana Supreme Court set out several factors to consider when apportioning fault among multiple defendants. Under the peculiar circumstances presented by the instant case, however, we find the most equitable apportionment of fault to be according to the percentage of days plaintiff worked for each of the two defendants, Brown & Root and Santa Fe, using January 19, 1982 as a cutoff date.

Plaintiff worked 598 days on Brown & Root pipelaying barges from 1976-1981, and 42 days for Santa Fe pipelaying barges in 1978-79, for a total of 640 days. As a percentage of the total, plaintiff worked for Santa Fe 6.5% of the time, Brown & Root 93.5% of the time. Liability for compensatory damages will be apportioned accordingly.

PUNITIVE DAMAGES

Brown & Root argues that the trial court erred in several respects in awarding plaintiff $4,000,000.00 in punitive damages. It first argues that punitive damages are not allowed under Louisiana law. The trial court rendered judgment in this case according to federal law. To the extent that federal law allows punitive damages in such cases, the award was proper.

Brown & Root also argues that a punitive damage award violates the Due Process Clause of the U.S. Constitution, as "suggested" by the U.S. Supreme Court in *Browning-Ferris Industries of Vermont, Inc. v. Kelco Disposal, Inc.*, 492 U.S. 257, 109 S.Ct. 2909, 106 L.Ed.2d 219 (1989). The U.S. Supreme Court has issued no definitive ruling holding that punitive damages are violative

of Due Process. To the contrary, subsequent to its decision in *Browning-Ferris Industries*, the U.S. Supreme Court held that a punitive damage award, which was more than four times the amount of compensatory damages awarded, did not violate the Due Process Clause of the 14th Amendment. *See Pacific Mutual Life Ins. Co. v. Haslip*, 499 U.S. ——, 111 S.Ct. 1032, 113 L.E.2d 1 (1991).

In *Osorio v. Waterman Steamship Corp., supra*, this court held, as a matter of law, that punitive damages are permitted under the general maritime law. *Id.* at 1008; citing *Complaint of Merry Shipping, Inc.*, 650 F.2d 622 (5th Cir.1981). Punitive damages are recoverable upon a showing of willful and wanton misconduct by the shipowner in failing to provide a seaworthy vessel. *Miles v. Melrose*, 882 F.2d 976 (5th Cir.1989). Whether punitive damages should be awarded is an issue for the trier of fact, whether it be judge or jury. *Complaint of Merry Shipping, supra.* A defendant must have been guilty of gross negligence, actual malice, or criminal indifference which is the equivalent of reckless and wanton misconduct. *Miles v. Melrose, supra.*

Subsequent to the lodging of the appeal in the instant case and the filing of original briefs by both parties, the U.S. Supreme Court decided the case of *Miles v. Apex Marine Corp.*, 498 U.S. 19, 111 S.Ct. 317, 112 L.Ed.2d 275 (1990).[3] In a supplemental brief, Brown & Root argues that *Miles* stands for the proposition that punitive damages are not recoverable under the general maritime law in claims for unseaworthiness. In *Miles*, the Supreme Court held that a party cannot recover damages for loss of society in a general maritime action for the wrongful death of a Jones Act seaman. At ——, 111 S.Ct. at 326. In reaching its decision, the *Miles* court looked to whether or not the Jones Act afforded recovery for non-pecuniary damages such as loss of society, which it did not. Brown & Root submits that punitive damages are not recoverable

[3] This was the continuation of *Miles v. Melrose, supra.*

under the Jones Act and, therefore, *Miles* precludes the recovery of punitive damages in claims for unseaworthiness such as in the instant case.

Brown & Root supports this contention by citing a recent federal district court decision interpreting the effects of *Miles* upon the availability of punitive damages under the general maritime law. In *Haltom v. Lykes Bros. Steamship Co., Inc.*, 771 F.Supp. 179 (E.D.Tex.1991), the district court for the Eastern District of Texas specifically held that punitive damages are not recoverable under the general maritime law after *Miles*. Plaintiff cites *Duplantis v. Texaco, Inc.*, 771 F.Supp. 787 (E.D.La. 1991), where the federal district court for the Eastern District of Louisiana held that punitive damages are recoverable under the general maritime law, at least in cases not involving claims based on unseaworthiness.

We disagree with the proposition that after *Miles* punitive damages are no longer available under the general maritime law in claims based on unseaworthiness. There is no definitive federal or state appellate court decision in this circuit or state holding that punitive damages are not recoverable under the Jones Act [4], much less under the general maritime law. Punitive damages are in a class apart from other non-pecuniary damages.[5] They serve the purpose of punishing the particular defendant, hopefully teaching him not to engage in the willful and wanton conduct again. Perhaps even more importantly, punitive damages deter others from following that defendant's example. *See Complaint of Merry Shipping, Inc., supra* at 625. Also, unlike the damages for loss of society addressed in *Miles*, and similar non-pecuniary but compens-

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[4] But see *Kopczynski v. the Jacqueline*, 742 F.2d 555 (9th Cir. 1984), *cert. denied*, 471 U.S. 1136, 105 S.Ct. 2677, 86 L.Ed.2d 696 (1985).

[5] To this extent we disagree with the contrary view of the court in *Neal v. Barisich*, 707 F.Supp. 862 (E.D.La.1989).

atory damages, punitive damages are by nature non-compensatory.

For the foregoing reasons, we hold that plaintiff was entitled to recover punitive damages in the instant case.

There is some conflict in the jurisprudence as to under what circumstances a principal can be held liable for punitive damages for the act of an agent or servant. In *Matter of P & E Boat Rentals, Inc.*, 872 F.2d 642 (5th Cir.1989), the court recognized that a majority of courts hold that vicarious liability of the master for wanton and willful acts done within the course and scope of employment extends to punitive damages even in the absence of approval or ratification. *Id.* at 650. The court also noted that a minority of courts follow the Restatement (Second) of Torts, § 909, and hold the principal liable for punitive damages only if (1) the principal or a managerial agent authorizes the act; (2) the agent was unfit and the principal or managerial agent was reckless in employing or retaining him; (3) the agent was employed in a managerial capacity and was acting in the course and scope of employment; or (4) the principal or a managerial agent ratified or approved the act. *Id.* at 650. Despite its recognition of the majority view, in *Matter of P & E Boat Rentals, Inc.*, the U.S. Fifth Circuit overturned an award of punitive damages, holding that such damages may not be imposed against a corporation when one or more of its employees decides on his own to engage in malicious or outrageous conduct. *Id.* at 652. This holding seemingly departs from both the majority and minority views.

In *McPhillamy v. Brown & Root Inc.*, 810 F.2d 529 (5th Cir.1987), a different panel of the U.S. Fifth Circuit affirmed a punitive damage award in an action under the Jones Act and under the general maritime law based on unseaworthiness. However, the issue of punitive damages was not addressed by the court.

In the instant case we believe the evidence supports an award of punitive damages under either the majority view or the Restatement (Second) of Torts, § 909. In its reasons for judgment in the instant case, the trial court stated:

> This court is shocked and incensed by the conduct of Brown and Root, Inc., in this case. Its management, assuming lay ignorance, was specifically warned of the hazards to its workers over a ten year period and chose to intentionally ignore those warnings.

In August 1967, Walter Gard, Manager, Gulf Coast Area, Pipeline Department of Brown & Root, wrote the Director of Radiation Control of the Louisiana Board of Nuclear Energy (now under the Louisiana Department of Environmental Quality, Nuclear Energy Division and hereinafter refered to as NED) concerning the possibility that its employees were being exposed to excessive radiation. Mr. Gard wrote to "assure [the Director of the NED] of [Brown & Root's] deep interest in [that] subject, affecting as it [did] the health and well being of our employees." In October 1967 he wrote that Brown & Root proposed to place lead sheets under the full length of the x-ray station, on each end of that area, and on the deck side of the station. He proposed to do this on all of their pipelaying barges. Mr. Gard said nothing about providing radiation monitoring devices for workers in the doping station as recommended in 1967 by the NED.

In April 1969 the NED wrote George Batcheller Jr., Brown & Root's Safety Engineer for the Pipeline Department, to recommend that 2.5 inches of lead shielding be installed on the M-211 to protect personnel in those areas adjacent to the x-ray station, i.e., the bunk room, and the x-ray and doping stations. The NED further informed Brown & Root that "this amount of shielding" was necessary to protect personnel in the bunk room from receiv-

ing radiation exposure approximately 10,000 times greater than permissible levels. To protect personnel on the deck, it was recommended that 1.6 inches of lead or 11 inches of concrete be installed to a height of 7 feet off the deck running the length of the x-ray station.

In May 1969, Mr. Batcheller wrote the NED, informing it that Brown & Root had "installed the necessary lead shielding on the M-211 to adequately protect the personnel in the near vicinity of the x-ray station, with respect to [NED's] requirements."

Contrary to this assertion, however, Brown & Root had simply installed .25 inches of lead shielding, one-tenth of the thickness recommended to protect the bunk room. In addition, this shielding had been installed only underneath the x-ray station, and against the bulkhead separating the bunk room from the x-ray station. Brown & Root falsely represented to the NED that it had installed 2.5 inches of lead shielding on the bulkhead to protect crewmen in the bunk rooms from receiving 10,000 times the permisible levels of radiation exposure allowed under federal and state regulation. Further, Brown & Root falsely represented to the NED that it had installed a 7 foot protective barrier constructed of 1.6 inches of lead or 11 inches of concrete to protect workers on the deck from being exposed to excessive radiation.

In 1976, Brown & Root was sent a report from the NED recommending that it install, on the M-211, 1.4 inches of lead or 14 inches of concrete extending under and around the x-ray station to protect personnel in the adjacent bunk room and personnel on the deck. Brown and Root did nothing.

The evidence established that all of Brown & Root's pipelaying barges were similar in design. Although the NED inspected only the M-211, it specifically stated in its 1976 report that it did so because it knew the barges were designed the same. We find that all recommenda-

tions by the NED as to the M-211 are necessarily applied to all of Brown & Root's pipelaying barges.

We find that the trial court was not clearly wrong in finding that Brown & Root's conduct in failing to follow the 1967, 1969, and 1976 recommendations of the DEQ, and in falsely representing to the NED that it had followed the 1969 recommendations, amounted to willful and wanton misconduct on its part. Brown & Root clearly and willfully violated its duty to furnish and maintain seaworthy vessels.

Walter Gard was the Manager of the Gulf Coast Area of Brown & Root's Pipeline Department. George Batcheller Jr. was Brown & Root's Safety Engineer for the Pipeline Department. Both of these persons were endowed by Brown & Root with decision-making responsibility and represented Brown & Root in dealings with the NED concerning protection of Brown & Root employees from excessive radiation. We believe Gard was a "managerial agent" as contemplated by § 909 of the Restatement (Second) of Torts. This type of managerial agent is equated in the Restatement with the principal so that the principal can be held liable for punitive damages for acts the managerial agent authorizes, approves or ratifies, as well as for acts personally done by the managerial agent in the scope of his employment. Batcheller apparently was not such a managerial agent but, nevertheless, acted in a supervisory role and had sizable authority to act on behalf of Brown & Root.

Considering the facts and circumstances of the instant case, we are unable to say the trial court erred in awarding punitive damages against Brown & Root for the wanton and willful conduct of their agents who were clearly acting on behalf of, and in the interest of, Brown & Root.

Brown & Root submits that the $4,000,000.00 punitive damage award was not warranted. Plaintiff argues that the punitive damage award was too small, particularly

when compared to Brown & Root's profits. Plaintiff cites *Kociemba v. G.D. Searle & Co.*, 707 F.Supp. 1517 (D. Minn.1989), in which the court set out a number of factors to be considered by a court in assessing punitive damages.[6] The trial court's reasons for judgment touch on most of these factors which were relevant, indicating that the trial court considered them in making the award of punitive damages.

However, the trial court refused to let plaintiff introduce a financial statement reflecting the earnings of Brown & Root and its percentage of earnings in relation to its parent corporation, Halliburton & Company. Plaintiff proffered that evidence. Assuming for the sake of argument that the revenues of Brown & Root are relevant to the assessment of punitive damages, and that the trial court erred in failing to allow plaintiff to introduce evidence of them, we are unable to say that consideration of that evidence warrants an increase in the trial court's award of punitive damages. We might also note that plaintiff presented no conclusive evidence as to what, if any, portion of Brown & Root's revenues were directly attributable to Brown & Root's failure to insure the safety of its personnel working on pipelaying barges.

On the other hand, considering the nature of the wanton and willful misconduct on the part of Brown & Root

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[6] The factors included:

1. The seriousness of the hazard to the public arising from the defendant's misconduct;
2. The profitability of the misconduct to the defendant;
3. The duration of the misconduct and any concealment of it;
4. The attitude and conduct of the defendant upon discovery of the misconduct;
5. The number and level of employees involved in causing or concealing the misconduct;
6. The financial condition of the defendant; and
7. The degree of the defendant's awareness of the hazard and of its effectiveness.

in light of the factors enunciated in *Kociemba*, we are unable to say the punitive damage award was excessive or a clear abuse of discretion.

GENERAL AND SPECIAL DAMAGES

Brown & Root claims the trial court erred in awarding general and special damages. The trial court awarded plaintiff a total of $3,147,607.70 in general and special damages.

1. *Past and Future Medical Expenses:*

The trial court awarded plaintiff $73,298.78 for past medical expenses, and $186,000.00 for future medical expenses. Brown & Root argues that plaintiff should be precluded from recovering these special damages because he failed to plead them.

Items of special damage must be specially alleged. La.C.C.P. art. 861; *Lanier Business Products, Inc. v. First National Bank of Rayville*, 388 So.2d 442 (La.App. 2d Cir.1980). Medical expenses are special damages, as they can be fixed to a pecuniary certitude. *Lauer v. City of Kenner*, 445 So.2d 1308 (La.App. 5th Cir.1984). Generally, a trial court may not award special damages which have not been specifically pled. *Usher v. Gongre*, 526 So.2d 1307 (La.App. 3rd Cir.1988). The only exception to this general rule is where otherwise inadmissible evidence of special damages is admitted without objection and the pleadings are thereby enlarged to encompass those special damages. *Usher*; La.C.C.P. art. 1154.

In the instant case, the trial court allowed plaintiff to introduce medical bills for his past medical treatment over the objection of Brown & Root. Although there was testimony by physicians concerning plaintiff's diagnosis and treatment, there was no testimony concerning the cost of this treatment. The testimony was directed to establishing the nature of the disease, existence of the

disease in plaintiff, the prognosis for his disease, and the circumstances surrounding his treatment. Under these circumstances, we cannot say the pleadings had been enlarged so that the medical bills were admissible evidence, or that plaintiff was entitled to recover for special damages which he failed to specifically plead in his petition. The trial court erred in awarding plaintiff special damages for past medical expenses.

Future medical expenses were properly awarded for the cost of a bone marrow transplant based on evidence adduced through the deposition testimony of Dr. David Margileth. Brown & Root made no objection when this deposition was read to the jury. Dr. Margileth testified that, at the time of trial, plaintiff's best hope of survival lay with a bone marrow transplant, even one from a donor who was not a perfect match, the only one available at the time of trial. Dr. Margileth stated that there was a possibility that plaintiff could be cured with such a transplant. He testified that bone marrow transplants cost anywhere from $100,000.00 to $1,000,000.00. He further stated that because plaintiff would have a donor who was not a perfect match, his transplant would be more difficult than normal. He estimated that such a transplant would cost $150,000.00. Dr. Margileth mentioned nothing about any other specific future medical expenses. Dr. Kardinal testified that bone marrow transplants range from $150,000.00-$180,000.00.

Future medical expenses must be established with some degree of certainty. *Burton v. Berthelot*, 567 So.2d 649 (La.App. 4th Cir.), *writ denied*, 569 So.2d 989 (La. 1990). However, an award of future medical expenses is in great measure highly speculative and not susceptible of calculation with mathematical certainty. *Burton v. Berthelot, supra; Edwards v. Sims*, 294 So.2d 611 (La. App. 4th Cir.1974), *overruled on other grounds, Harris v. Tenneco Oil Co.*, 563 So.2d 317 (La.App. 4th Cir. 1990).

The evidence established that plaintiff desperately needed a bone marrow transplant, that a potential donor had been located, that the transplant would be a difficult one, and that it could cost anywhere from $100,000.00 to $1,000,000.00. Considering the speculative nature of future damages, we are unable to say that the trial court erred in awarding plaintiff $186,000.00 in future damages.

2. *Future Lost Wages*:

The trial court awarded plaintiff $804,397.00 in future lost wages.[7] Brown & Root argues that the trial court should not have allowed testimony as to future lost income because "the evidence clearly indicated that Mistich would die." Brown & Root states that "virtually all of the doctors" agreed that it was more probable than not that plaintiff "would be dead within six months of March 1, 1989." They cite the deposition of Dr. Margileth for this fact, as they did when addressing future medical expenses. Dr. Margileth did not testify that plaintiff would be dead in six months. He testified that without a bone marrow transplant a patient in plaintiff's condition would live one or two months on the average, six months at the outset. However, this was without a bone marrow transplant. With a transplant, Dr. Margileth testified that plaintiff could not only survive longer, but that there was a possibility he could be completely cured.

The trial court based its award of future lost wages on the calculations of Dr. Melville Wolfson. Brown & Root stipulated that Dr. Wolfson was an expert in the field of forensic economics. Dr. Wolfson averaged plaintiff's income for the years 1982-1985 for a net income figure of $41,833.00. He estimated that plaintiff had an estimated work life expectancy of 25 years, based on U.S. Department of Labor statistics and a life expectancy of 61 years.

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[7] Defendants did not specifically raise or address as an assignment of error the trial court's award of $83,912.00 for plaintiff's past lost wages. Thus, we will not review that portion of the award of damages. *See Uniform Rules—Louisiana Courts of Appeal*, Rule 1-3.

The trial court apparently did not accept the testimony of Brown & Root's economics expert, Dan Cliffe. Cliffe used an average of three years income, 1983-1985, for a figure of $33,416.67. He estimated plaintiff's future lost wages, with an inflation rate of 3.25%, to be $431,075.00. He made no calculations for meals given plaintiff on pipelaying barges, or other fringe benefits such as life insurance, hospitalization, retirement pension, etc.

Before he can recover damages for future lost wages, a plaintiff must prove the loss with reasonable certainty. *Whatley v. Regional Transit Authority*, 563 So.2d 1194 (La.App. 4th Cir.), *writ denied*, 569 So.2d 965 (La. 1990). *See also, McGowan v. Sewerage and Water Board of New Orleans*, 555 So.2d 472 (La.App. 4th Cir.1989). However, such damages need not be proven with mathematical certainty. *Whatley v. Regional Transit Authority, supra.*

The trial court was faced with accepting the testimony of either plaintiff's expert economist, or the expert presented by Brown & Root. We are unable to say that the trial court was clearly wrong in accepting the testimony of plaintiff's expert as to his future lost wages.

3. *Pain and Suffering*:

The trial court awarded plaintiff $800,000.00 in damages for his past and future physical pain and suffering, and $1,200,000.00 for his past and future mental pain and suffering. Brown & Root claims that both of these awards are excessive and an abuse of the trial court's discretion.

A trier of fact has much discretion in the assessment of general damages. La.C.C. art. 2324.1; *Burton v. Berthelot, supra; Landy On Behalf of Landy v. Smith*, 542 So.2d 731 (La.App. 4th Cir.1989). Before an appellate court can disturb a trial court's award of general damages, the record must clearly reveal that the trier of fact abused its discretion in making the award. *Coco v. Winston Industries, Inc.*, 341 So.2d 332 (La.1976); *Harris v. Doucette*, 539 So.2d 997 (La.App 4th Cir.1989). If such

an abuse of discretion is found, the appellate court may look to other awards made in similar cases as an aid to raising or lowering the award to the highest or lowest point which would have been reasonably within the discretion of the jury. *Reck v. Stevens*, 373 So.2d 498 (La. 1979); *Coco v. Winston Industries, supra; Harris v. Doucette, supra.*

a. *Past and Future Physical Pain and Suffering:*

Plaintiff testified that he began experiencing what were symptoms of leukemia sometime in late 1984 or during 1985, the exact period is unclear. He began experiencing night sweats, extreme fatigue, and bleeding gums. He said he "explained away" these symptoms and did not consult a physician. At some point his lymph nodes swelled up and he was treated with antibiotic medication which appeared to remedy the problem. In late January 1986 he sought emergency treatment at West Jefferson Hospital after experiencing severe pain in left side, and night sweats. He went to the hospital about 11:00 p.m. and was told at 3:00 a.m. that he may have leukemia. He was subsequently diagnosed with CML, and remained in the hospital for nine days. Plaintiff testified that the pain in his side, his spleen, was excruciating.

Plaintiff suffered in the chronic stage of CML from January 1986 until late December 1988—early January 1989 when he went into the "blast" or accelerated stage. Until January 1989, Dr. Margileth treated plaintiff with hydrea, medication which suppressed the disease in his bone marrow, lowered his white blood cell count and reduced the size of his spleen. Dr. Margileth testified that the chronic phase of the disease was "very easy" to "control." However, he stated that during the change from the chronic to blast stage the disease becomes more difficult to control, requiring increased dosages of hydrea administered at more frequent intervals. This began happening to plaintiff in late summer 1988.

Dr. Margileth said that when plaintiff actually entered a blast crisis in late December 1988-early January 1989 his spleen was swelling and he was experiencing rib pain and some intermittent fever. In early March 1989 plaintiff was admitted to the hospital and underwent an "aggressive high-dose chemotherapy regimen" to "empty out" his diseased bone marrow in hopes that the "recovered" or "regenerated" bone marrow would be more normal. Dr. Margileth testified that plaintiff "did remarkably well" with this chemotherapy and experienced no nausea or vomiting. He said plaintiff could expect some hair loss, which was beginning at the time of trial.

Overall, plaintiff apparently fared better during his illness than many in his circumstances. However, as of the time of trial, he faced the prospect of continued pain and suffering during his illness and treatment. A difficult transplant operation and recovery lay ahead of him. The transplant operation would have involved high doses of chemotherapy to kill all but the "stem" cells of the bone marrow before the transplant of healthy bone marrow. Dr. Margileth said donor rejection problems would center around the G.I. Tract, and involve a lot of diarrhea, sometimes to the point of dehydration. He also said there could be a skin rash ranging from mild redness to the skin actually coming off, and liver problems, including a cessation of liver function.

Considering how well plaintiff had endured his life-threatening illness and treatment as of the time of trial, the $800,000.00 awarded plaintiff for past and future pain and suffering might be considered on the high side. However, we are unable to say that the award was an abuse of the great discretion afforded the trial court in making these awards.

b. *Past and Future Mental Pain and Suffering*:

Brown and Root claims the award of damages for past and future mental pain and suffering is "incredible" considering that most of the time plaintiff was suffering

from CML he lived "a gratifying and rewarding life, and handled his condition quite well."

Dr. Margileth testified that plaintiff had been an "excellent" patient. However, he also testified that plaintiff took his diagnosis "very poorly." Plaintiff attempted to find work but was apparently not hired because of his disease. The previously active plaintiff was described by his mother as a very tired and depressed individual. She said he would lounge on the couch, watch television and sleep.

Plaintiff testified that it was "very difficult" for him to deal with his diagnosis and illness. He said he attempted to commit suicide on two occasions. He then directed and diverted his energies towards working for leukemia victims. Plaintiff threw himself into fundraising activities for the Tri-County (Orange, Riverside, and San Bernadino Counties, California) Chapter, of the Leukemia Society of America, Inc. In 1988 he was selected as one of the three Poster Team Ambassadors by the Tri-County Chapter. The "ambassadors" were touted as a tribute to the successful treatment of leukemia patients. Plaintiff was also a member of the Orange County Parents Against Leukemia Group. He began working with an organization called The Lifesavers Foundation of America to raise public awareness for the need for bone marrow donors. He also coordinated blood drawings for the National Bone Marrow Registry.

Considering the evidence in light of the great difficulty faced by trial courts in quantifying a plaintiff's pain and suffering, we are unable to say that the trial court abused its discretion in making the award for past and future pain and suffering. While the award may be on the high end of the scale for similar pain and suffering, we cannot say it is excessive.

INTEREST

Brown & Root's final assignment of error concerns the trial court's award of prejudgment interest on one-half of

the amount awarded in compensatory damages. It attributed this one-half to the unseaworthiness responsibility of Brown & Root. Brown & Root claims the trial court abused its discretion in awarding the prejudgment interest and, further, erred in awarding the interest "under Louisiana law."

When a Jones Act claim is tried jointly with a general maritime claim before a judge, prejudgment interest may be awarded at the trial court's discretion. *Osorio v. Waterman Steamship Corporation, supra; Mihalopoulos v. Westwind Africa Line, Ltd.*, 511 So.2d 771 (La.App. 5th Cir. 1987); *Ceja v. Mike Hooks, Inc., supra.* Although within the discretion of the trial court, the allowance of prejudgment interest in general maritime claims is the rule, rather than the exception. *Webster v. M/V Moolchand, Sethia Liners, Ltd.*, 730 F.2d 1035 (5th Cir.1984). Generally, prejudgment interest should be awarded in maritime law. *Curry v. Fluor Drilling Services, Inc.*, 715 F.2d 893 (5th Cir. 1983); *Musial v. A & A Boats, Inc.*, 696 F.2d 1149 (5th Cir.1983).

We see no peculiar circumstances, and Brown & Root points out none, which would justify this court's finding an abuse of discretion in the trial court's awarding of prejudgment interest on one-half of the total award. We also find no support for Brown & Root's claim that the rate of prejudgment interest should not be that provided by Louisiana law.

DECREE

For the foregoing reasons, we amend the judgment of the trial court to apportion fault between Brown & Root and Santa Fe International, Inc. at 93.5% to Brown & Root, 6.5% to Santa Fe, and reduce the special and general damages proportionately. We further amend the judgment of the trial court to eliminate the award of $73,298.78 for past medical expenses. We affirm the judgment as to the award of punitive damages.

Accordingly, we amend the judgment of the trial court to award plaintiff, Stephen A. Mistich, a total of SIX MILLION EIGHT HUNDRED SEVENTY-FOUR THOUSAND FOUR HUNDRED SEVENTY-EIGHT AND 90/100 ($6,874,478.90) DOLLARS, plus interest as specified in the original judgment, itemized as follows:

Past lost wages	$ 78,457.72
Future medical	$ 173,910.00
Future lost wages	$ 752,111.19
Past and Future physical pain and suffering	$ 748,000.00
Past and Future emotional injury, mental pain and suffering	$1,122,000.00
Punitive damages	$4,000,000.00
Total	$6,874,478.90

AMENDED; AFFIRMED AS AMENDED.

APPENDIX B

COURT OF APPEAL, FOURTH CIRCUIT
STATE OF LOUISIANA

Clerk's Office, New Orleans, Dec. 16, 1992

DEAR SIR:

REHEARING WAS THIS DAY REFUSED IN THE CASE ENTITLED

No. 89-CA-1420

STEPHEN A. MISTICH

v.

PIPELINES, INC., *et al.*

Very truly yours,

/s/ Danielle A. Schott
Clerk of Court

APPENDIX C

THE SUPREME COURT
OF THE STATE OF LOUISIANA

No. 93-C-0146

STEPHEN A. MISTICH

vs.

PIPELINES, INC., *et al.*

IN RE: Brown & Root Inc.;—Defendant(s); Applying for Writ of Certiorari and/or Review; to the Court of Appeal, Fourth Circuit, Number 89CA-1420; Parish of Plaquemines 25th Judicial District Court Div. "B" Number 29-703

March 12, 1993

Denied.

PFC
JLD
JCW
HTL
CDK

MARCUS & ORTIQUE, JJ., would grant the writ.

HALL, J., not on panel.

Supreme Court of Louisiana
March 12, 1993

/s/ [Illegible]
Clerk of Court
For the Court

APPENDIX D

25TH JUDICIAL DISTRICT COURT
FOR THE PARISH OF PLAQUEMINES
STATE OF LOUISIANA
DIVISION "B"

No. 29-703

STEPHEN A. MISTICH

versus

PIPELINES, INCORPORATED, *et al.*

Filed: Apr. 28, 1989

/s/ Merlene M. Barthel
Deputy Clerk

JUDGMENT

This matter came on for trial on the 11th day of April, 1989 and concluded on the 20th day of April, 1989.

PRESENT: Lawrence D. Wiedemann, William Hazlaris and Mark A. Pivach, Attorneys for Plaintiff

James F. Holmes, J. Warren Gardner and Jeffrey Christovich, Attorneys for Defendant, Brown and Root, Inc.

The Court, after hearing the evidence, the argument of counsel, and considering the exhibits admitted into evidence by the parties, finds as a matter of fact, as follows:

Plaintiff, Stephen A. Mistich, was unnecessarily and improperly exposed to excessive levels of radiation as a seaman aboard vessels owned by Brown and Root, Inc., Pipelines, Inc., Lennard Pipelines, Inc., Sea-Con Services,

Inc., and Santa Fe International, Inc., over the period June 11, 1976-November 18, 1985.

The exposure to which plaintiff, Stephen A. Mistich, was subjected during his employments with Lennard Pipelines, Inc., Pipelines, Inc., and Sea-Con Services, Inc., was not causally related to plaintiff's condition because the employment periods were subsequent to the latency period for chronic myelogenous leukemia diagnosed on January 19, 1986.

The exposure period during plaintiff's employment with Santa Fe International, Inc. (seven days) is questionably related due to the latency period, but, if related, is de minimis when compared to the exposure period during plaintiff's extended employment with Brown and Root, Inc. over the period 1976-1984 (approximately 1073 days).

The Court finds, as a matter of fact, that Brown and Root, Inc. was negligent and that the various vessels owned by it on which plaintiff worked over the aforesaid period were unseaworthy. The Court also finds, as a matter of fact, that the negligence of Brown and Root, Inc. was a cause-in-fact, and the unseaworthiness of Brown and Root, Inc.'s vessels was the cause-in-fact of plaintiff's chronic myelogenous leukemia due to exposure to excessive levels of radiation; each of the aforesaid theories of fault contributing equally to plaintiff's injuries and damages.

The Court finds, as a matter of fact, that plaintiff did not contribute in any way to the injuries, or damage, sustained by him.

The Court apportions the fault of plaintiff's Jones Act/General Maritime employers, as follows:

Brown and Root, Inc.	100%
Pipelines, Inc.	0%
Lennard Pipelines, Inc.	0%
Sea-Con Services, Inc.	0%
Santa Fe International, Inc.	0%

The Court finds that plaintiff is entitled to compensatory damages in the sum of THREE MILLION ONE HUNDRED FORTY-SEVEN THOUSAND SIX HUNDRED EIGHT AND NO/100 ($3,147,608.00) DOLLARS, itemized as follows:

Past Medical	$ 73,298.78
Past lost wages	$ 83,912.00
Future medical	$ 186,000.00
Future lost wages	$ 804,397.00
Past and Future physical pain and suffering	$ 800,000.00
Past and Future emotional injury, mental pain and suffering	$1,200,000.00

The Court further finds, as a matter of fact, that the conduct of Brown and Root, Inc. was willful and in gross disregard of plaintiff's rights, and accordingly, awards to plaintiff punitive damages in the sum of FOUR MILLION AND NO/100 ($4,000,000.00) DOLLARS.

Finally, the Court utilizes its discretion and awards prejudgment interest from the date of judicial demand on one-half (½) of the amount awarded in compensatory damages, at the legal rate provided under Louisiana law, and herewith taxes all costs against defendant, Brown and Root, Inc.

JUDGMENT READ, RENDERED AND SIGNED at Pointe-a-la-Hache, Louisiana, this 28th day of April, 1989.

/s/ [Illegible]
Judge

APPENDIX E

25TH JUDICIAL DISTRICT COURT
FOR THE PARISH OF PLAQUEMINES
STATE OF LOUISIANA
DIVISION "B"

No. 29-703

STEPHEN A. MISTICH

versus

PIPELINES, INCORPORATED, *et al.*

Filed: May 25, 1989

/s/ Jeanine H. Kuhlman
Deputy Clerk

REASONS FOR JUDGMENT

The Court rendered Judgment in the above entitled and numbered cause on the 28th day of April, 1989, assessing compensatory and punitive damages against defendant, Brown and Root, Inc., in the total sum of $7,147,608.00.

Stephen A. Mistich, presently 35 years of age and a father of three legally adopted children, worked as a seaman/welder aboard various pipelaying barges owned by Brown and Root, Inc., Pipelines, Inc., Lennard Pipelines, Inc., Sea-Con Services, Inc., and Santa Fe International, Inc., over the period June 11, 1976-November 18, 1985.

On all the barges on which plaintiff worked over the aforesaid period, each weld would be x-rayed either by an internal, or external, x-ray machine. The evidence preponderates that external x-ray machines were predominantly used on the vessels on which plaintiff worked over the period in question, and further preponderates that the radiation source was typically 100 curies of Iridium-

192. Each weld would be x-rayed following the finishing weld in the "capping" station. The external machine would make three shots of each weld of approximately thirty seconds duration. Each shot would cover a 120 degree section of the weld. The first weld would be shot from the top of the pipe downward; the second shot would be from the outboard side of the pipe inboard; and the third shot would be from the inboard side of the pipe outboard. The internal x-ray machine, which was infrequently used on the barges on which plaintiff worked, would shoot one 360 degree shot of the weld from the inside of the pipe in all directions. The plaintiff, William Reinhardt, "Buddy" Pruett, and Mitchell Tidwell testified that the barges would average eighty welds per day and that a majority of the x-rays would be shot in the "capping" station, as opposed to the designated x-ray station, with the capping welders six to eight feet away and unprotected. This testimony is basically uncontradicted. Defendant produced no evidence or testimony to refute plaintiff, Pruett, or Tidwell. The record contains a great deal of testimony by Brown and Root witnesses as to the policy and guidelines to be employed and implemented by the x-ray technicians but not any testimony as to whether these were actually carried out or enforced in connection with the day to day operation. The evidence establishes that this process of "moving up" to x-ray the welds was dictated and directed by Brown and Root, Inc., and was carried out in order to maintain a high level of production.

The crew quarters and crew facilities on which plaintiff worked were either directly below the "pipe alley", or immediately adjacent to the "pipe alley", the "pipe alley" being a trough on the port side of the vessel where the pipe moved along on rollers to receive its various services, including x-ray. The welders, like plaintiff, customarily slept in the quarters beneath their working stations, the theory being that a worker's replacement on an opposite shift would follow the "golden rule".

On pipelaying barges, the welders would tend to work in stations wherein the job performed most fitted their individual skill. Although the welders rotated from station to station on some barges, the evidence preponderates that the plaintiff herein most often worked in the capping station, which was the station closest to the x-ray station. Accordingly, he frequently slept in the quarters beneath, or adjacent to the x-ray station.

The evidence unequivocally established that the State of Louisiana, Department of Environmental Quality, Office of Air Quality and Nuclear Energy, on three occasions inspected pipelaying barges owned by Brown & Root, Inc., and McDermott, Inc., for the specific purpose of determining if there was a radiation hazard to the workers on the barges from the x-ray activities. The inspections were made in 1967, 1969, and 1976. Each report was sent to Brown & Root, Inc. management. The 1967 report was sent to Mr. Walter Gard, Manager of the Pipeline Department; the 1969 report was sent to Mr. George Batcheller, Jr., Safety Engineer; and the 1976 report was sent to Mr. Claude Adams, Safety Supervisor, and Mr. W. C. Jones, Terminal Manager. The 1967 report put Brown and Root, Inc., on notice that the workers in stations adjacent to the x-ray station were subject to radiation exposure in excess of the maximum quarterly allowable dosage, established by the United States Nuclear Regulatory Commission, 10 CFR ch. 1, Part 20, and adopted by Louisiana through the Department of Environmental Quality, Office of Nuclear Energy, as an agreement state, Title 33 of the Louisiana Radiation Regulations, Part 15, Ch. 4, page 95, et seq. The report specifically cautioned Brown and Root, Inc., that personnel monitoring be provided in order to adequately determine the radiation exposure of the workers in the area adjacent to the x-ray station, or alternatively, that fixed shielding be provided to intercept the scattered radiation from the x-ray activities. The evidence clearly establishes that

Brown & Root, Inc., did not furnish the workers with the monitoring suggested and did not install the fixed shielding to intercept the scattered radiation. Finally, the report cautioned that persons in the living quarters might be exposed to excessive radiation if radioactive materials, such as Iridium-192, were used. Pruett testified that on one occasion a monitoring device was to be installed in the crew quarters, which was done but no results were revealed to any welder and no official report was made and if made was not presented at trial.

The 1969 report, based on work load calculations provided by Brown & Root, Inc., concluded that personnel in the bunk room adjacent to the x-ray station would be exposed to 89,000 mR per week, which would be 10,000 times the permissible level of 10mR per week maximum under the aforesaid applicable regulations. The report went on to recommend the installation of 2.5 inches of lead shielding, seven feet aft and seven feet forward of the x-ray station on the pipe alley deck; on the pipe alley bulkhead between the pipe alley and the bunk area; and three feet back from the pipe alley bulkhead on the main deck above the bunk area. The intention of the foregoing being to totally insulate the crew in the bunk, and living areas, below the x-ray station from radiation. The report went on to recommend 1.6 inches of lead or 11 inches of concrete seven feet high running the fourteen foot length of the x-ray area to protect personnel on deck from radiation. None of the foregoing were done by Brown and Root, Inc. The 1976 report confirms Brown and Root, Inc.'s non-compliance with the 1967 and 1969 reports because it established the presence of only .25 inches of lead on a portion of the bulk head between the pipe alley and the bunk space. It discloses no lead on the deck of the pipe alley, no lead on the top of the bunk area, inadequate lead between the bunk area and the pipe alley, and no lead shield to protect the personnel on deck. The 1976 report went on to establish the potential of excessive

allowable radiation exposure and recommended the installation of a 2-½ inch lead, or fourteen inch concrete, enclosure above, inboard and below the x-ray station to protect personnel on deck and personnel in the bunk area, or living quarters. Every witness, including Brown and Root's witnesses, testified that the 1976 recommendations of the Louisiana Division of Radiation Control were never complied with by Brown and Root, Inc. All of the foregoing inspections and recommendations occurred prior to the time that plaintiff went aboard a Brown and Root, Inc. pipelaying barge in 1976.

Every adult lay person in this country knows that radiation is an ultra-hazardous activity and that those persons working with, or around, it on a daily basis must insulate themselves therefrom with lead lining. The court is shocked and incensed by the conduct of Brown and Root, Inc., in this case. Its management, assuming lay ignorance, was specifically warned of the hazards to its workers over a ten year period and chose to intentionally ignore those warnings. In addition to the foregoing, a Brown and Root barge captain, Mr. "Buddy" Pruett testified that he requested lead from the Safety Department over a two-year period and was ultimately furnished with only .25 inch lead sheeting to insulate a portion of the bulk area on his barge. This Court would be remiss and insensitive were it not to conclude that Brown and Root's conduct was willful, callous, and in total disregard of the rights of its employees. No case could better fit the punitive damage prerequisite of the United States Fifth Circuit Court of Appeals in *In Re: Merry Shipping Co.*, 650 F.2d 622 (1981) than the instant case.

All of the physicians that testified in this case concurred in plaintiff's diagnosis of chronic myelogenous leukemia. Additionally, every medical witness that testified concurred that exposure to excessive levels of radiation is an accepted cause of leukemia, and chronic myelogenous leukemia specifically. The foregoing accepted causal relationship

originally grew out of the experience of radiologists thirty or forty years ago prior to the recognition of the necessity for lead shielding, and was confirmed by the unfortunate aftermath of Nagasaki and Hiroshima. In all of the foregoing unfortunate populations, grossly excessive levels of leukemia, including chronic myelogenous leukemia, were detected following radiation exposure. Dr. David Margileth and Dr. Lee Roy Morgan both testified that plaintiff's chronic myelogenous leukemia was, in their opinion, legally caused by his exposure to excessive levels of radiation. The court was impressed with the expertise, demeanor, candor, and honesty of these two dedicated physicians. Dr. Marcus Black and Dr. Carl Kardinal testified that they could not say that radiation exposure did, or did not, cause plaintiff's chronic myelogenous leukemia, although both admitted that they accepted the fact that radiation does cause plaintiff's type leukemia. Their vanilla testimony was of no help to the Court because neither was willing to render an opinion one way, or the other. Since an expert can only express an opinion, an expert that is unwilling to express an opinion adds nothing to the decision making process. The testimony of Dr. William Stein, who saw the plaintiff on one occasion, is totally disregarded by the Court. Dr. Stein's adversarial demeanor and willingness to make unsupported and unwarranted conclusions, leads this court to conclude, as a matter of fact, that his testimony is unworthy of belief. The court further noted that Dr. Stein relied only on treatises and writings of other medical doctors, however the testimony of all other Doctors testifying was very positive, that no case histories, by the very nature of the disease, had ever been conducted by the medical profession, therefore the court concluded that the testimony of Dr. Stein is based solely on theories expounded by the persons he quoted and on which he based his opinion on.

The standards for protection against radiation passed by the United States Nuclear Regulatory Commission, and the standards for protection against radiation passed

by the Louisiana Office of Nuclear Energy, aforecited, were specifically passed for the purpose of protecting the American and Louisiana worker from the hazard, among others, of cancer and leukemia associated with excessive radiation exposure. Those regulatory bodies recognized that exposure to greater than 0.5 rem in any one calendar year places the exposed person at risk of cancer or leukemia.

Mr. Ronald Wascom, an employee of the Louisiana Division of Radiation Control, and the author of the 1976 report, testified that the plaintiff herein was exposed throughout his employment, to levels of radiation greatly in excess of the maximum annual allowable, and the court as a matter of fact, concludes that to be the case based on all of the evidence brought out at the trial including, but not limited to, the testimony of Mr. Wascom.

The Court finds, as a matter of fact, that the plaintiff's chronic myelogenous leukemia was directly caused by his exposure to excessive levels of radiation.

The Court as a matter of fact, also finds that the vessels on which plaintiff worked for Brown and Root, Inc., were unseaworthy, and that Brown and Root, Inc., was negligent.

The Court concludes that the aforesaid unseaworthiness was the cause, and the aforesaid negligence a proximate cause, of plaintiff's contraction of leukemia, each theory of liability contributing equally to plaintiff's injuries and damages.

Plaintiff, as a matter of fact, was also exposed to excessive levels of radiation while working on barges owned by Pipelines, Inc., Lennard Pipelines, Inc., Sea-Con Service, Inc., and Santa Fe International, Inc., with whom the plaintiff settled 21 days prior to trial for the sum of $250,000.00. The settlement with these defendants is reflected in a stipulation filed in the record of the case prior to commencement of the trial against Brown and

Root, Inc. The Court accepted plaintiff's testimony that the conditions were basically no different on the barges owned by the settling defendant than those heretofore described on the barges operated by Brown and Root, Inc. The only factual difference between the posture of the settling defendants is the absence of any prior inspection or warning, by any regulatory agency, and the fact that plaintiff's employment with the settling defendants, with the exception of Santa Fe International, Inc., preceded plaintiff's diagnosis of chronic myelogenous leukemia on January 19, 1986, by less than four years.

The Court considered the possible liability of the settling defendants for the purpose of apportioning fault as required under General Maritime Law.

The testimony of all of the physicians that testified in this case, and the Nagasaki and Hiroshima experiences, establishes, beyond a doubt, that there is a definite latency period between radiation exposure and the advent of symptoms of cancer, or leukemia, induced by radiation.

The Court finds as a matter of fact, that the applicable latency period is not less than three years, but more reasonably in excess of four years. Accordingly, plaintiff's employment with all of the settling defendants, with the possible exception of Santa Fe International, Inc., were subsequent to the latency period and, accordingly, had no causal relationship with plaintiff's contraction of chronic myelogenous leukemia. The Court further finds that plaintiff, during his employment with Santa Fe International, Inc., could have been exposed to radiation from x-ray for a maximum of seven days and concludes that such exposure, if within the latency period, is de minimis when compared with the length of exposure, (approximately 1,073 days), with Brown and Root, Inc. Therefore, the Court has concluded that plaintiff's exposure during his employment with Brown and Root, Inc., contributed 100% to his contraction of chronic myelogenous leukemia, whereas his employment with the settling defendants contributed 0%.

Turning now to the Court's evaluation of compensatory damages due by Brown and Root, Inc. to plaintiff, predicated upon the Court's heretofore determination of negligence and unseaworthiness, the Court, as a preamble, is constrained to cite the Louisiana First Circuit Court of Appeal decision in *Wisner v. Illinois Central Gulf Railroad, et al*, 537 S.2d 740 (1988), wherein the Court affirmed, with moderate modifications, a $2,794,000.00 jury verdict in favor of a 35 year old Louisiana State Trooper. In the *Wisner* case, the plaintiff claimed damages for lung impairment and fear of cancer as a consequence of exposure to unconfirmed levels of toxic chemicals. In the instant case, the plaintiff has confirmed chronic myelogenous leukemia secondary to established levels of radiation grossly in excess of the maximum annual allowed exposure.

The Court was impressed by the testimony of Dr. Melville Wolfson, the plaintiff's economist, and the reasonableness of the acceptable criteria utilized by him in reaching his calculations. The Court on the other hand, found the testimony of defendant's economist, Dr. Dan Cliffe, to be devoid of acceptable criteria to impress this Court with the accuracy of his calculations. For instance, his utilization of present day earning factors and inflationary factors spanning seventy-five years preceding trial, do not measure up to a standard of objectivity. The Court finds as a matter of fact, that plaintiff sustained past lost wages in the sum of $83,912.00 and future lost wages in the sum of $804,397.00 both testified to by Dr. Melville Wolfson.

Dr. Margileth, and Dr. Carl Kardinal, testified that a bone marrow transplant, alone, one of the reasonably anticipated procedures that plaintiff will have to undergo, would cost between $100,000.00 and $1,000,000.00 depending on the rejection factor ever present in such a procedure. Plaintiff was hospitalized in a blast state one month preceding trial at a cost in excess of $50,000.00

and according to Dr. Margileth, is certain to be hospitalized for additional chemotherapy and radiation treatment prior to institution of a bone marrow transplant procedure. Therefore, the Court feels that an award for future medical expenses of $186,000.00 is conservative considering the foregoing testimony.

The parties stipulated to plaintiff's past medical bills totaling $73,298.78, reserving defendant's objection to the causality. The Court finds that the stipulated bills were in fact causally related to plaintiff's exposure to radiation and contraction of chronic myelogenous leukemia, and, accordingly, finds that amount due by defendant.

The Court can think of no set of circumstances that could possibly produce greater physical pain, mental anguish, fear of death, loss of ability to enjoy life, and loss of ability to pursue happiness than the set of circumstances that confronted and continued to confront the plaintiff in this case. The Court was moved by the sincerity, intelligence, desire for life, and determination to survive exhibited by this young man during the course of this trial.

The Court feels that an award of $800,000.00 for pain and suffering and $1,200,000.00 for mental anguish, both encompassing the other elements heretofore addressed, to be fair compensation for those elements of damage.

Ten years of warnings, which if heeded, could have saved this young man, were intentionally ignored by defendant herein. The State of Louisiana could not get the defendant's attention by direct notification to defendant's management personnel. It is incumbent upon this Court, therefore, to attempt to get the defendant's attention by assessing an amount of punitive damages that will hopefully bring about an alteration of their pipelaying vessels to save those other workers who, like the

plaintiff, may be still exposed to hazard. The Court awards to the Plaintiff the sum of $4,000,000.00 in punitive damages for the foregoing reasons.

The Court, under the discretion vested in it, awards interest, at the legal rate provided under Louisiana Law, on one-half of the foregoing compensatory damage award attributable to the unseaworthiness responsibility of defendant from date of judicial demand and legal interest at the rate provided under Louisiana Law, on the remainder of the judgment, compensatory and punitive, from date of judgment until paid.

The Court further casts defendant for all costs of these proceedings.

/s/ Emile E. Martin, III
EMILE E. MARTIN, III
Judge

May 25th, 1989.